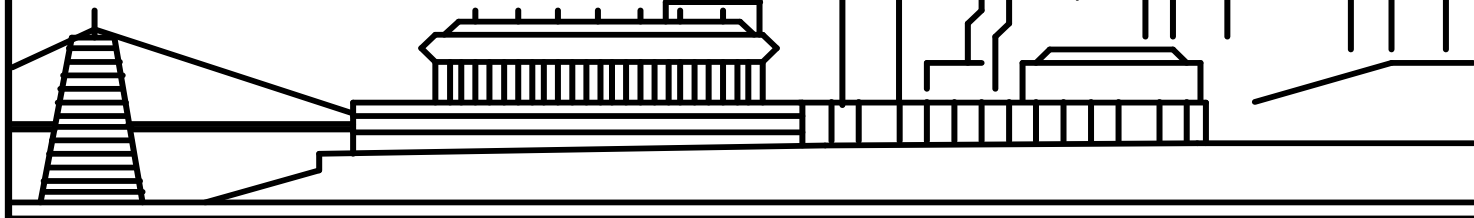




**INSTITUTE OF
ELECTRICAL &
ELECTRONICS
ENGINEERS, INC.**



MARCH 1995

IEEE CINCINNATI SECTION NEWSLETTER

MARCH MEETING

Camera Electronics: Control, Auto Focus, Auto Exposure and Packaging

DATE: THURSDAY, MARCH 23, 1995

PLACE: Institute of Advanced Manufacturing Sciences (IAMS)

TIME : 5:30 (Social Time)

6:00 (Dinner)

7:00 (Program)

8:30 (Approx. - Adjourn)

COST: \$7.00 Members

3.00 Students

9.00 Non-Members

Reservations are required for dinner only!

Please call Dee Scott at **385-9446**

by NOON, Wed. March 22nd

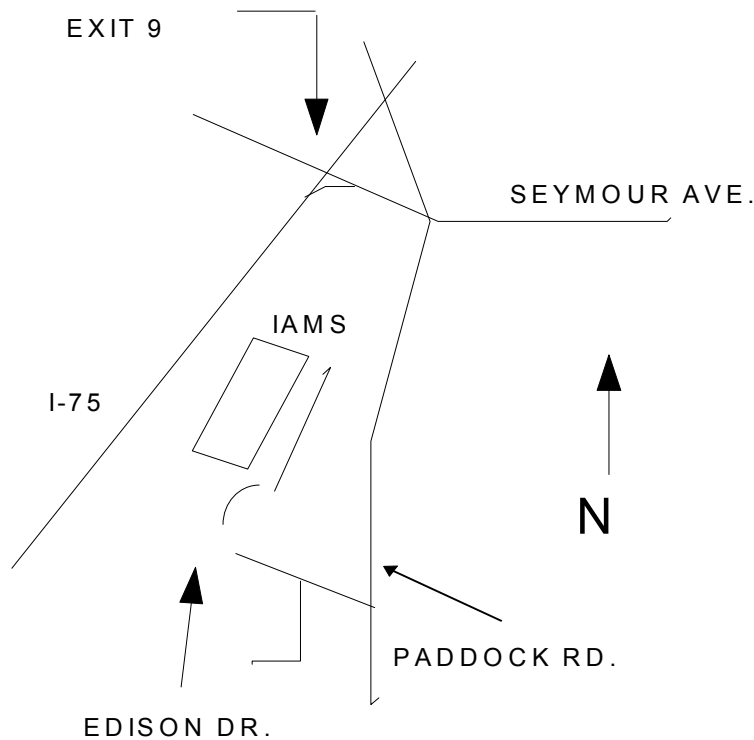
ABOUT THE PRESENTATION

The presentation, by Mr. Clay A. Dunsmore of Eastman Kodak Company, will include a high-level description of how the current generation of point and shoot 35mm cameras work and are partitioned. Included are design parameters, transistor circuitry design, design of focusing and viewing systems, how information is processed inside the camera and the operation and design tradeoffs of subsystems while keeping in mind that the ultimate goal is to take a picture.

BACKGROUND OF THE SPEAKER

Mr. Clay A. Dunsmore is a Project Development Engineer for the Eastman Kodak Company with eleven years of experience in camera design. He provides system support (discrete electronics, photometrics, electronic packaging, electro-mechanical interfacing, etc.) and ASIC design support (digital controllers, switching power supplies, motor and coil drivers, etc.) on products ranging from Single Use cameras to high end point and shoot 35mm cameras. He received a BSEE from the University of Toledo in 1983 and a MSEE from National Technological University in 1992.

MAP TO IAMS



CHAIRMAN'S MESSAGE

by Steve Olenick

Approximately ten members of the IEEE Executive Committee attended the ESC Awards Banquet to see Randy Holt, IEEE member and past chairman of the Cincinnati Section, receive this year's Professional Accomplishment Award (Academic). Once again, congratulations to Randy !!!!.

The upcoming March 23 technical meeting is approaching and features the new, self focusing Kodak camera. A representative from Kodak is flying here specifically for the IEEE. Later this spring we are planning a Saturday morning tour of the scrubber at CG&E's East Bend power plant.

On February 25, I was invited by Chris Burkey, student member of the IEEE and sysop of the OMI College of Applied Science IEEE Engineering Bulletin Board to view an on-line presentation of the Internet. The presentation was informative and very well done by a group of OCAS students. It included the history of the Internet, what services the Internet can provide, how to get access, how to navigate and the future of the Internet. The Chairperson was David Buffington with Brian Miller, Raymond Ande, Brian Vogel, Chris Burkey, Jeff Crowder and John Donaldson all speaking or supporting the effort. The students have also established a BBS (513-556-4880) that they continually are improving. They are also looking into establishing a Homepage and support their activities through a variety of fundraising activities. We may coax them to present at a general membership meeting.

Norbert Bambach E-mailed me with the official hardware configuration required for Windows 95, as identified in Microsoft Magazine (Winter 94). It is a 386DX with 4 MB of RAM, not the 486DX with 8 MB of RAM that I suggested. My thanks to Norbert for his input.

Coming on April 4 & 5 is the Electronics and Instrumentation Conference and Exhibit. Over 150 exhibitors will attend this biannual event held at the Cincinnati Convention Center. There will also a number of free and paid technical sessions. Further information is available from Jerry Gilman (513-627-5427) or Phil Ruckman (513-634-7720).

Please remember that your employer may re-imburse you for part or all of your IEEE membership dues. With all of the corporate downsizings, however, this benefit is often reduced or eliminated as a cost cutting measure. Until next time...

THE BEGINNING OF COMMERCIAL TELEVISION

by R. J. Reiman, Historian

World War II had brought the growth of television broadcasting to a halt, but it stimulated advancements in television technology. At the end of the war, the television industry began gearing up for production. RCA, GE and Dumont began designs of studio and transmitting equipment. AT&T was busy constructing its L-I coaxial cable network which was capable of distributing television programs throughout the country. The FCC announced it would begin accepting applications for commercial television stations.

Because of the higher cost of TV station equipment compared to radio equipment, the larger operating costs including staff, the lack of facilities to distribute TV programs, and the few TV sets in use by the public, only a few stations went on the air. Six were on the air in 1946 and four more in 1947. A further problem existed: Should the broadcasts be monochrome or color?

William Paley of CBS, a brilliant business leader, and Peter Goldmark, CBS' senior engineering executive, were proponents of the field sequential color TV system, which had continued development during the war. It was a mechanical system that used rotating color wheels at the camera and the receiver. It was capable of producing attractive pictures with brilliant color up to a limited extent. Would RCA telecast with monochrome? If so, what set should the public buy? CBS went ahead with color and petitioned the FCC for authorization of commercial TV, while RCA did the same with monochrome.

This set off a standards battle similar to the one on radio broadcasting, but CBS stood alone, with RCA and the others opting for monochrome. The FCC ruled that the CBS color system, and the UHF band were not sufficiently perfected to begin commercial broadcasting. With the way clear, on-the-air stations increased until 124 were authorized by 1952. The public was buying sets with enthusiasm with RCA leading the way.

The FCC began to hear complaints of co-channel interference with "venetian" bands appearing on the set as a result of interference. RCA tried detuning the carrier frequency of one of the co-channels, and this made the offending "blinds" barely visible. The FCC ban on further allocations addressed frequency assignment policies and color transmission standards and lasted four years until April 11, 1952. After a number of attempts which were bitterly criticized, the FCC's Sixth Report and Order was favorably received. The report achieved the elimination of serious interference between co-channel and adjacent channel stations, it opened up the UHF band for broadcasting, and its reallocation of VHF for crowded centers like New York City and Chicago, opened up the way for a third network, ABC, to compete with NBC and CBS. The number of VHF stations alone increased to over 500 commercial and 100 public stations and this was matched by the sales of receivers with almost 70 million sold by 1965.

The development of UHF would take time and color TV would replace monochrome.

LIGHTING EDUCATION COURSE

Architects, engineers, designers, building managers, maintenance engineers, energy management consultants, lighting sales personnel, building owners, contractors and nonlighting design professionals are invited to attend a two day Lighting Education course presented by The Ohio Valley Section of the Illuminating Engineering Society of North America (IESNA) on April 6 & 7, 1995 at the Hartwell Education Center. The course is designed as the "next step" for those who have taken a lighting fundamentals course previously. No previous lighting knowledge is required. The new IESNA Technical Knowledge Examination (TKE) is based on this course's knowledge level. This makes this a must take course for anyone wishing to take this exam in July, 1995.

Day 1 of the course runs from 7:30 am to 5:00 pm and covers such topics as Lighting Math, Vision, Color, Light Sources, Ballasts, Optical Control, Illuminance Calculations - The Lumen Method and Calculating Illuminance At a Point.

Day 2 (8 am to 5 pm) covers Psychological Aspects of Lighting, Design Concepts, Computers in Lighting Design and Analysis, Lighting Economics, Daylight Calculations, Electrical Quantities and Building Electrical Distribution and Electrical Controls.

Nationally recognized speakers and local professionals will be instructing the course.

Registration fee is \$175 for IESNA Members & \$200 for Nonmembers. The course includes a complete manual (\$65 value), lunch and snack breaks. Registration is required by **March 17, 1995**. To register, call **513-621-6211**.

IEEE NEWS

IEEE OFFERS U.S. MEMBERS NEW RETIREMENT PLANNING SOFTWARE

WASHINGTON, Feb. 6 -- The IEEE has introduced a new software package to help its U.S. members achieve financial security after retirement. The Institute is offering the Retirement Asset Manager software to members at a special discount through the IEEE Financial Advantage Program. The software was developed in consultation with the IEEE-USA Engineering Employment benefits Committee.

Retirement Asset Manager for Windows provides a comprehensive, step-by-step approach to savings and investing for a secure retirement. It helps users focus on their retirement income goals, determine realistic future income needs, and explore income sources and investment strategies to meet those goals.

The software carries a retail price of \$69.95, but IEEE members can purchase it for only \$44.95 through the IEEE Financial Advantage Program, a member service that brings value-added benefits on a variety of financial services. For more information or to place an order, call 1-800-ASSTMGR.

ENDANGERED FEDERAL TECH-POLICY PROGRAMS DEFENDED AT IEEE-USA NATIONAL FORUM

WASHINGTON, Jan. 10 -- Supporters of federal funding for technology development urged participants at a Washington technology-policy forum to defend programs threatened by the new Republican congressional majorities. The 1994 National Forum, sponsored by the United States Activities division of The Institute of

Electrical and Electronics Engineers Inc. (IEEE-USA), was held Dec. 12-13, at the Johns Hopkins University Applied Physics Laboratory in Laurel, Md.

Speakers from federal agencies, industry and Capitol Hill emphasized the early success of some Clinton-sponsored technology-development programs and presented a bleak picture of the U.S. high-technology sector without federal partnerships. Brian Belanger, deputy director of the National Institute of Standards and Technology's Advanced Technology Program (ATP) -- slated for extinction on a GOP list of suggested cuts to fund the Contract With America -- argued that industry needs ATP in order to foster economic growth and to create more high-wage jobs for engineers and scientists. According to Belanger, by cost-sharing high-risk technological development with potentially high payoffs, ATP helps realize projects that are either too expensive or risky for private industry to finance alone, or would otherwise be "limping along with less than critical mass".

Gene Banucci, CEO of Advanced Technology Materials Inc. (ATMI), presented his company as a success story of federal partnership with small high-technology business. Through the Small Business Innovation and Research (SBIR) program and partnerships with larger companies, ATMI has grown from just an idea to a thriving high-tech manufacturer which has developed new products in the environmental equipment, industrial-diamond production and flat-panel display areas -- while producing high-wage jobs (average salary: \$47,000) for more than 100 employees.

Dwight Duston, director of innovative science and technology at the Ballistic Missile Defense Organization (BMDO), offered dual-use technology programs as a way to create government-industry partnerships in an era of federal budget restraints. According to Duston, "Most technology is dual-use, even when it's not obvious." By pursuing a project intelligently, industry can commercialize its dual-use technology "on a shoestring" by partnering with the BMDO -- with minimal government investment, and still supporting legitimate defense objectives, he said.

In spite of the litany of support at the forum for federal programs designed to boost U.S. economic competitiveness, Ken Jacobson, editor of New Technology Week, warned that enthusiasm for such programs is not shared by the leaders of the upcoming 104th Congress. According to a key GOP staffer quoted by Jacobson, "ATP is in the cross-hairs." In the Republican view, programs such as ATP contradict its theory that the market is better than government in "picking winners and losers," and constitute unjustifiable expenditures after a voter mandate to cut government spending. Jacobson said that Clinton gave ATP a high profile as a prime example of his tech-policy approach; as a result, the new Congress may use it to demonstrate the proverb, "The nail that sticks up will be pounded down."

Jacobson asked participants to evaluate the importance of federal help for industry, before giving up on such programs. He cited the lack of R&D money in today's environment of corporate belt-tightening, the stripping of trade protections for American industry through the GATT treaty, and corporate reluctance to move into new technologies as forces which make necessary a federal role in promoting technological development. but he also expressed a fear that industry will be seduced by short-term benefits in the GOP tech-policy approach -- such as R&D credits and a cut in capital-gains taxes -- and will capitulate on programs such as ATP which promise more distant payoffs. Jacobson warned attendees, "People are coming to the Hill with their minds made up. If they're not changed fast, they're not going to get changed." He concluded, "If you people care about it (government-industry partnerships), then some of the next voices heard should be yours."

NATIONAL INNOVATION WORKSHOP - 1995

The Dayton Section of The Institute of Electrical and Electronics Engineers, Inc. (IEEE) with Sinclair College, Dayton, Ohio is co-sponsoring National Innovation Workshop-1995 at Sinclair College on May 19 & 20, 1995. Its purpose is to provide guidance and information to entrepreneurs, innovative business owners and inventors in bringing their ideas to the marketplace.

The workshop will feature plenary speakers Mr. Dean Kamen (President of DEKA R&D, Chairman of TELETROL, 1994 Kilby Award laureate and Founder of S.E.E. & F.I.R.S.T.), Dr. Leon Lederman (Winner of Nobel Prize in Physics, Energy FERMI Prize, National Medal of Science), Mr. Benno Liebermann (Founder and President of BELTEC International and holder of 131 patents) and Dr. Raymond Kralovich (Founder of STERIS Corp. and President of K & Associates).

Multiple breakout sessions (about 30 each day) by experienced National speakers will cover such topics as structuring an organization to grow, commercializing your invention, protecting your ideas, technology transfer, intellectual property, estimating the value of your invention, positioning the product, etc. There is also a special track session set up for school educators to train them to teach innovation to the students.

The registration fee is \$125 which includes breakfast, lunch, breakouts, reception and parking for both days. For details, contact Prof. Nataraj S. Nataraj at (513) 226-2575 or 2570 or 2936 (FAX) or Sharon at (513) 226-3061 or (513) 449-5141.

Dee Scott (call for meeting reservations)	385-9446
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Bob Haas - Vice Chairman	231-2584
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MARCH 1995

IEEE CINCINNATI SECTION NEWSLETTER



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